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Country: Germany

Titel of the project: Predictability of atrial fibrillation by measuring autonomous functional parameters

Project details

Carolin Stupp

INVADE gem. GmbH

Award amount: €100,000

Occasionally occurring atrial fibrillation should be diagnosed or predicted in phases of normal cardiac activity. The so-called "ART method" developed for this purpose should be evaluated and applied for 1000 persons within the scope of the applied for project. In this way atrial fibrillation should be detectable and treatable BEFORE a stroke occurs.

Persons with constant or occasionally occurring atrial fibrillation have a risk of a stroke five times greater in comparison with other persons of the same age if they remain untreated. The risk of developing atrial fibrillation rises in turn with age, according to studies this being from 1.5% when aged between 50 and 59 years to 23.5% at an age from 80 to 99 years. Nevertheless, the dysrhythmia frequently remains undetected and the number of unreported cases is presumably much higher. Occasionally occurring atrial fibrillation is detected only by chance in the individual ECG examination. Around 2/3 of all strokes could be prevented by treatment of these persons on time. Therefore, to be able to detect and protect endangered persons, a diagnostic method is required which can detect the tendency to atrial fibrillation even in phases of apparently normal cardiac activity. In fact there are approaches promising success and the first published results here. In the "ART Study" of the German Heart Center in Munich, parameters that are suitable for predicting atrial fibrillation (baroreflex sensitivity, pulse pressure variability, respiratory rate variability and T-wave vector variability) are determined over a 30-minute ECG and non-invasive measurement of the arterial blood pressure. A connection with the risk of death after initially survived heart attack could already be proven. It should now be examined whether these parameters are suitable for predicting atrial fibrillation and its complications. If this assumption is confirmed, it will be possible to provide specific prevention of stroke. In the Framingham Offspring Study, magnetic resonance examinations of the brain were performed to search for expired, possibly unnoticed strokes. A clear relationship between known atrial fibrillation and such strokes could be demonstrated here. In the public welfare INVADE project, 1000 persons aged over 50 years were also examined by magnetic resonance with the same parameters within the scope of a study called "Neuro-prevention" and all established risk factors were recorded. We are currently searching for a possibility of uniting both projects, namely the search for predictors of atrial fibrillation and the examinations of the Neuro-prevention project. The Neuro-prevention study represents an ideal model for verifying and if necessary refining the ART method and finally of making it available to the general public. For this purpose the examinations of the ART study must be performed on all participants of the Neuro-prevention study and the results must be evaluated jointly. However, the financial means for this are lacking, especially those for devices which are assembled as prototypes from approved single components. All other examinations including performance and evaluation of the magnetic resonance imaging data, statistical acquisition and evaluation, study support and supervision by the Munich Study Center are already financed within the scope of the "Neuro-prevention study" by the German Neurology Foundation. The participants have already been recruited and the risk factors have been acquired already within the scope of the higher-ranking INVADE project.

Audience

Type

- AF Patients
- Healthcare professionals
- Carers of AF Patients
- 1000 voluntary
- well examined participants of the public welfare INVADE project in Ebersberg

Location

Germany, Europe